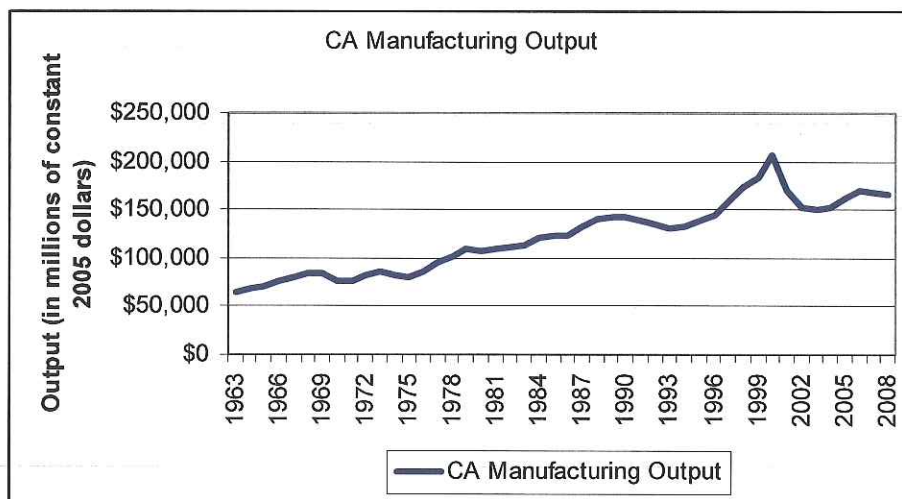


## California

California is the world's eighth largest economy, contributing 13 percent to the nation's GDP, up from 11 percent in the 1960s.<sup>6</sup> Historically, the manufacturing sector has played a prominent role in sustaining the State's economy; for example, contributing an average of more than 20 percent to the state's gross state product in the 1960s.<sup>7</sup> In 2008 and for most of the past decade, manufacturing's share of California's gross state product was 10 percent, with \$181.1 billion of value generated in 2008 relative to \$1.85 trillion of gross state product. Between 1963 and 2008, manufacturing output in California grew at an annual rate of 2.1 percent in constant dollar terms, above the annual average manufacturing output growth rate for the United States, but below rate of growth for gross state product of about 3.6 percent annually over the same period (also in constant dollar terms).

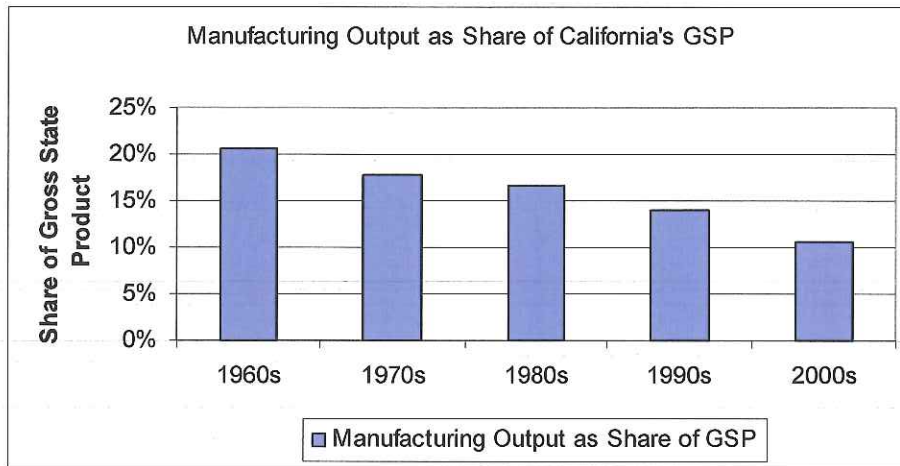
**Figure 5: California Manufacturing Output**



<sup>6</sup> Milken Institute. Manufacturing 2.0: A More Prosperous California. June 2009. Page 26.

<sup>7</sup> Earliest data available from the Bureau of Economic Analysis is 1963.

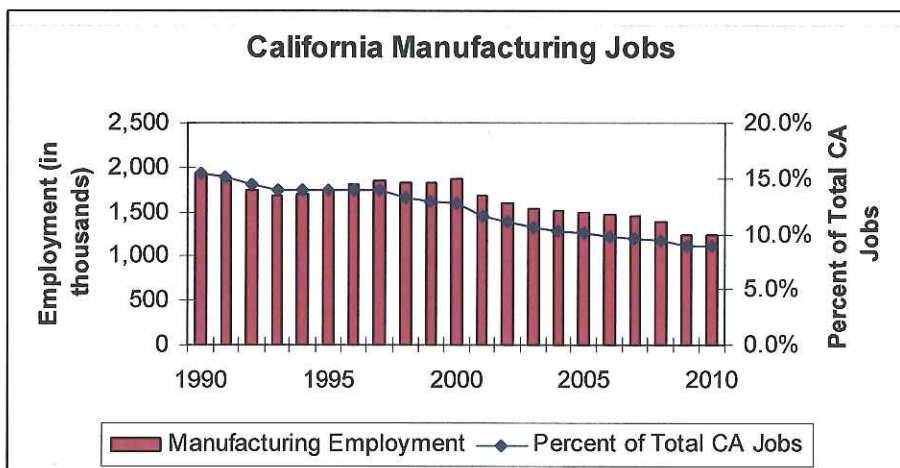
**Figure 6: California Manufacturing Output as Share of State GSP**



Source: Bureau of Economic Analysis; Economic & Planning Systems, Inc.

Since 1990, manufacturing jobs in California declined by more than 36 percent, for a loss of more than 700,000 jobs. More than 640,000 of those jobs were lost in the past decade alone. At the end of 2009, there were 1.23 million manufacturing jobs in the State, representing 9.0 percent of California's overall non-farm employment. Within California's manufacturing industry, the average annual compensation was \$88,000 in 2009, nearly 30 percent higher than the average annual compensation in the rest of the workforce.

**Figure 7: California Manufacturing Jobs (1990 to 2010)**

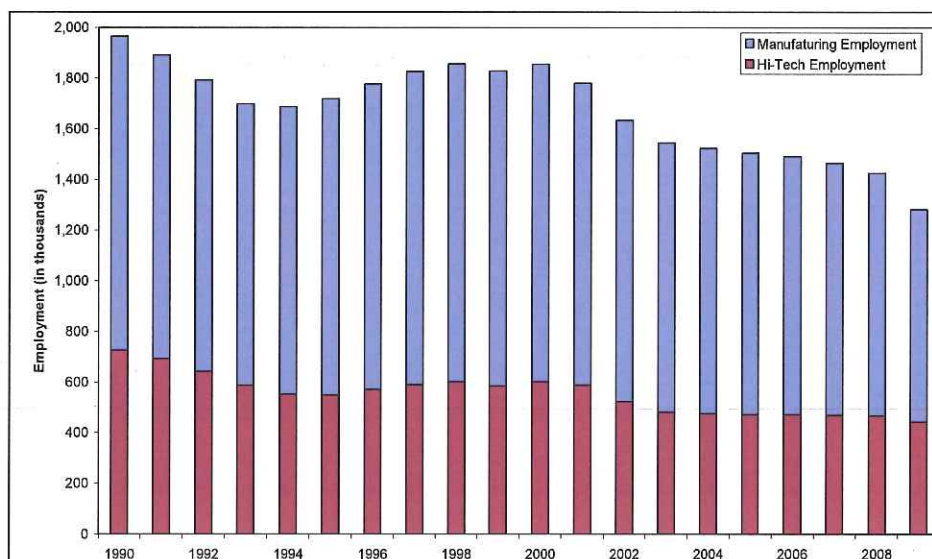


Source: Bureau of Labor Statistics; Economic & Planning Systems, Inc.

The composition of industries within the manufacturing sector is continually evolving as State, national, and global economies change. The State's top ten manufacturing industry sectors (in terms of employment at the four-digit NAICS code level) accounted for 44 percent of State manufacturing jobs in 2007, and six of the ten largest industry sectors (measured by employment) were in relatively high-paying, high value-added, high-tech manufacturing (e.g., IT, aerospace, and biopharmaceuticals).<sup>8, 9</sup>

The State is recognized as a global leader in high-tech innovation and manufacturing. In 2007, the combined output of California's high-tech manufacturing totaled almost \$114.8 billion, or 58 percent of the manufacturing sector's total contribution to real gross state product. This level of output represented an increase of 28 percent from 2000 to 2007.<sup>10</sup> Despite this increase in output in the past decade, absolute employment in high-tech manufacturing has declined every year since 2000. Still, high-tech employment as a percentage of total manufacturing employment in California has steadily increased since 2003.

**Figure 8: California's Manufacturing and Hi-Tech Employment (1990–2008)**



Source: Bureau of Labor Statistics; Economic & Planning Systems, Inc.

<sup>8</sup> Milken Institute. Manufacturing 2.0: A More Prosperous California. June 2009. Page 43. The six "high-tech" sectors that were in the State's top ten manufacturing industry sectors in 2007 included: (1) semiconductor and other electronic component manufacturing, (2) computer and peripheral equipment manufacturing, (3) printing and related support activities, aerospace product and parts manufacturing, (4) plastics product manufacturing, navigational, measuring, electromedical, and control instruments manufacturing, (5) communications equipment manufacturing, and (6) commercial and service industry machinery manufacturing.

<sup>9</sup> Though the definition of high-tech evolves with every innovation, high-tech typically refers to technology that is the most advanced technology available.

<sup>10</sup> Milken Institute. Manufacturing 2.0: A More Prosperous California. June 2009. Page 28.

### **California's Largest Manufacturing Industries**

The State's largest manufacturing industry in terms of employment and output was the computer and electronic product manufacturing industry, supporting more than 275,000 jobs in 2009 and more than \$35 billion of output in 2007. Though this high-tech industry lost more than 100,000 jobs following the dot-com bust and continued to lose jobs through 2009, specific sub-industries, such as the semiconductor and electronic component industry, have posted slow expansions since 2004 because of the State's information technology cluster's ties to manufacturing and research institutions.

The State's second largest manufacturing industry in terms of employment was food manufacturing which supported 11.5 percent of the State's manufacturing jobs in 2009, despite a 7 percent decline since 2001. In the United States, food manufacturing is the largest industry, employing 12.3 percent of manufacturing employees. Chemical manufacturing was the State's second largest contributor to manufacturing output in 2007 and expanded more than 200 percent since 1997 and more than 68 percent since 2000.

The third largest industry in terms of output (in 2007) was the petroleum and coal products manufacturing sector, which generated \$18 billion of output, while the third largest industry in terms of employment was fabricated metal product manufacturing.

Food manufacturing was the State's fourth largest industry in terms of manufacturing output, while transportation equipment manufacturing is the fourth largest manufacturing industry in the state in terms of employment. Within the industry, the search and navigation equipment manufacturing sectors, which make products such as radar equipment, aeronautical devices and flight recorders and aerospace manufacturing, are both strong sectors. The aerospace industry employed more than 72,200 workers in 2007. The rate of decline in this subsector has slowed in recent years, in part because the Iraq war has increased demand for aircraft and has helped, at least temporarily, to stabilize the industry.<sup>11</sup>

**Tables 3 and 4** present detailed subsector information at the three-digit NAICS code level about employment and output in the State's manufacturing industry.

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<sup>11</sup> Milken Institute. Manufacturing 2.0: A More Prosperous California. June 2009. Page 27.



**Table 3**  
**CA Manufacturing Employment**  
**South Fremont/Warm Springs Area Transformational Opportunities; EPS #20050**

	Percent of Total Manufacturing Employment (2009)	Rank	Percent Change in Employment (2001 through 2009)	Rank
<b>CA Manufacturing</b>				
Computer and electronic product manufacturing	21.8%	1	-33.7%	11
Food manufacturing	11.5%	2	-7.1%	3
Fabricated metal product manufacturing	9.2%	3	-27.8%	7
Transportation equipment manufacturing	8.8%	4	-21.5%	6
Miscellaneous manufacturing	6.3%	5	-18.7%	5
Chemical manufacturing	6.0%	6	-7.3%	4
Machinery manufacturing	5.4%	7	-33.6%	10
Apparel manufacturing	4.7%	8	-42.6%	17
Printing and related support activities	3.8%	9	-37.0%	15
Plastics and rubber products manufacturing	3.5%	10	-34.9%	14
Beverage and tobacco product manufacturing	3.3%	11	24.2%	1
Furniture and related product manufacturing	2.7%	12	-52.7%	21
Nonmetallic mineral product manufacturing	2.4%	13	-34.6%	13
Electrical equipment and appliance mfg.	2.2%	14	-34.1%	12
Paper manufacturing	1.8%	15	-32.2%	9
Wood product manufacturing	1.8%	16	-47.1%	19
Primary metal manufacturing	1.6%	17	-31.5%	8
Petroleum and coal products manufacturing	1.3%	18	1.4%	2
Textile product mills	0.8%	19	-43.8%	18
Textile mills	0.8%	20	-38.2%	16
Leather and allied product manufacturing	0.3%	21	-48.3%	20

Source: Bureau of Labor Statistics; Economic & Planning Systems, Inc.

**Table 4**  
**CA Manufacturing Output**  
**South Fremont/Warm Springs Area Transformational Opportunities; EPS #20050**

	Percent of Total Manufacturing Output (2007)	Rank	Percent Change in Output (1997 through 2007)	Rank
<b>CA Manufacturing</b>				
Computer and electronic product manufacturing	20.2%	1	-10.5%	19
Chemical manufacturing	12.8%	2	205.3%	1
Petroleum and coal products manufacturing	10.2%	3	165.4%	2
Food product manufacturing	10.0%	4	46.2%	4
Miscellaneous manufacturing	7.2%	5	80.6%	3
Fabricated metal product manufacturing	7.0%	6	24.7%	9
Other transportation equipment manufacturing	7.0%	7	42.3%	5
Machinery manufacturing	4.8%	8	16.7%	12
Apparel manufacturing	2.7%	9	14.3%	13
Plastics and rubber products manufacturing	2.7%	10	5.7%	16
Nonmetallic mineral product manufacturing	2.6%	11	41.4%	6
Printing and related support activities	2.4%	12	-9.0%	17
Electrical equipment and appliance manufacturing	2.1%	13	19.7%	10
Furniture and related product manufacturing	2.0%	14	26.3%	8
Primary metal manufacturing	1.6%	15	33.2%	7
Paper manufacturing	1.5%	16	6.3%	15
Motor vehicle, body, trailer, and parts manufacturing	1.4%	17	18.3%	11
Wood product manufacturing	1.1%	18	-9.3%	18
Textile and textile product mills	0.7%	19	9.4%	14

Source: Bureau of Economic Analysis; Economic & Planning Systems, Inc.

### **California Industries Gaining Jobs**

Drilling down to the four-digit NAICS code level, a recent trend emerges in the State's manufacturing sector—an expansion of industries that serve consumer markets, such as the beverage manufacturing industry, pharmaceutical and medicine manufacturing, and other food manufacturing.<sup>12</sup> Pharmaceutical and medicine manufacturing, for example, supported more than 44,300 manufacturing jobs in 2007. This high-tech industry has added 6,400 jobs since 2000, an increase of 17 percent, and more than 21,100 jobs since 1990. The average wage was \$102,200, a 44 percent increase since 2000.

### **California Industries Losing Jobs**

The State's declining industries include cut and sew apparel manufacturing, computer and electrical product manufacturing, and the printing industry.

- Cut and sew apparel manufacturing was once the fourth-largest manufacturing employer in California, but since 2000, the industry has shed more than 45,000 jobs. The computer and electrical product industry once had the biggest share—21 percent—of manufacturing jobs in the State. However, this industry suffered greatly from the tech bubble's collapse in 2000, when more than 115,000 jobs disappeared.
- The printing industry is suffering as digital media is growing. The industry employed more than 58,300 workers in 2007, having shed 23,500 positions since 2000, a decrease of 29 percent. The average wage was \$45,600 in 2007, a 16 percent increase since 2000.

## **Regional**

Within California, there are regional concentrations and clusters. On a very broad level, Los Angeles is focused on aerospace, San Diego has pursued biotechnology, and the San Francisco Bay Area has biotech and information technology clusters. The San Francisco Bay Area comprises nine counties and is home to approximately 7.5 million people. The region functions as an integrated economy that has strong connections to numerous other geographies including the Central Valley and the Pacific Rim. Within the Bay Area, there are a diverse range of industry sectors spread throughout the region with core job concentrations in San Francisco, Silicon Valley, the I-80/880 Corridor, the Tri-Valley, and locations within the North Bay. The City of Fremont is influenced by and falls within two job centers, Silicon Valley (that includes San Mateo County, Santa Clara County, southern Alameda County, and northern Santa Cruz County) and the I-80/880 Corridor (that includes cities from Richmond in the north to Fremont in the south and occupies the western portion of Alameda and Contra Costa counties). This section focuses on the subregion of the San Francisco Bay Area that surrounds the City of Fremont, including the counties of Alameda, San Mateo and Santa Clara, that together capture most of Silicon Valley and the I-80/880 Corridor.

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<sup>12</sup> Other food manufacturing includes coffee and tea, snacks, mixes, spices, condiments, prepared meals, and specialty ethnic foods.



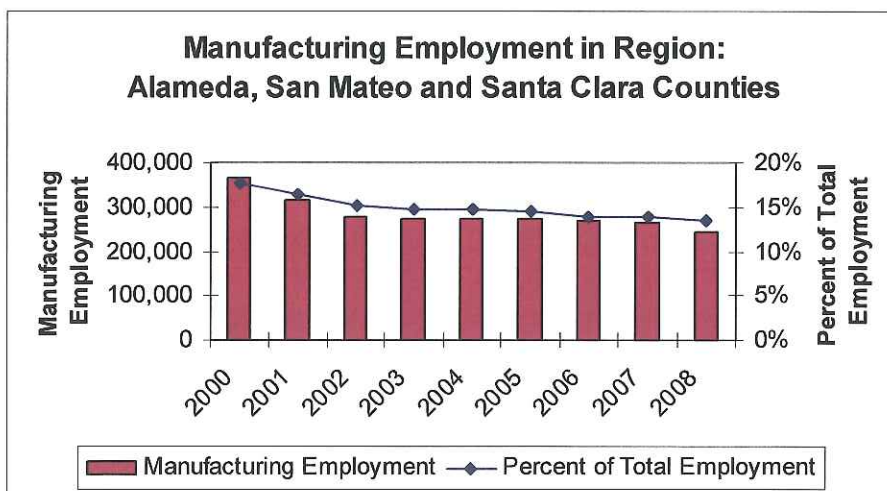
**Figure 9: Manufacturing Output in Region (2001–2008)**



Source: Bureau of Economic Analysis

Between 2001 and 2008, subregional manufacturing output increased by 39 percent in real terms (4.8 percent annually), with the period of significant growth occurring between 2002 and 2007 (58 percent), consistent with overall economic growth in the United States. As in previous periods, however, this increased overall manufacturing production did not help generate jobs in the region. Between 2001 and 2009, manufacturing employment in the subregion declined 33 percent and now stands at about 245,000 jobs, 13.5 percent of total subregional employment. In 2001, manufacturing represented nearly 18 percent of total employment (see **Figure 10**). Employment was flat during the period of general economic expansion in the United States (2002 to 2007), but declined dramatically during the 2000-2001 recession and the Great Recession and its aftermath. At the same time, the number of private sector manufacturing businesses has fallen each year since 2002 with 17 percent fewer establishments in 2009 than in 2001 (see **Figure 11**). The pace of decline became more rapid after 2005.

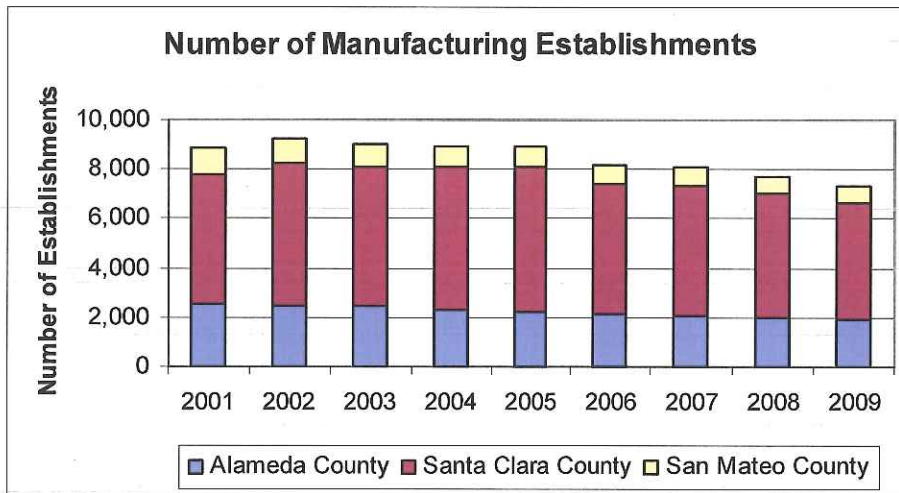
**Figure 10: Regional Manufacturing Employment (2000–2008)**



Source: Bureau of Labor Statistics; Economic & Planning Systems, Inc.



**Figure 11: Number of Manufacturing Establishments (2001–2009)**



Source: Bureau of Labor Statistics; Economic & Planning Systems, Inc.

Comparing the tri-county subregion to the whole of the State and nation illustrates the more significant role of manufacturing in the subregion (see **Table 5**). At 13.5 percent, the subregion's concentration of manufacturing employment is about 50 percent higher than for both the State and the nation. Because of the higher concentration in high-value manufacturing and the associated worker productivity, the manufacturing sector's 17.5 percent contribution to subregional output is 65 to 70 percent higher than for both the State and the nation. Though recent manufacturing job losses in the region have been more severe proportionally than at the U.S. and State levels, the region's output has expanded significantly since 2001 compared with output declines in the State and nation. This expansion was primarily driven by growing output in the computer and electronic manufacturing.

**Table 5: Comparisons of Manufacturing Employment and Output**

Geography	Manufacturing Employment as a share of Total Employment	Percent Change in Manufacturing Employment	Manufacturing Output as a share of Total Output	Percent Change in Manufacturing Output Since 2001
United States	9.3% [1]	-18.4% [6]	11.1% [1]	3.7% [4]
California	8.9% [1]	-18.3% [4]	9.8% [2]	-2.3% [4]
Region [3]	13.5% [1]	-27.0% [4]	17.2% [2]	38.7% [4]

[1] As of 2009.

[2] As of 2008.

[3] Defined as San Jose-Sunnyvale-Santa Clara, CA and San Francisco-Oakland-Fremont MSAs

[4] 2001 through 2008.

Source: Bureau of Labor Statistics; Bureau of Economic Analysis; Economic & Planning Systems, Inc.

As shown on **Table 6**, the largest manufacturing industry in the subregion is Computer and Electronic Product manufacturing, which represents 53 percent of manufacturing jobs in 2009, despite losing 38 percent of its 2001 job base. This subsector concentration is very high compared with shares of 21.8 and 12.3 percent in California and the United States, respectively. Only two manufacturing industries added jobs between 2001 and 2009: Beverage and Tobacco Product Manufacturing expanded by 6 percent and Chemical Manufacturing grew by 10 percent. All other industries declined, with Apparel manufacturing and Leather and Allied Product manufacturing each losing approximately 70 percent of their 2001 jobs. Transportation Equipment manufacturing shed 55 percent of its 2001 job base.

**Table 6**  
**Regional Manufacturing Employment**  
**South Fremont/Warm Springs Area Transformational Opportunities; EPS #20050**

	Percent of Total Manufacturing Employment (2009)	Rank	Percent Change in Employment (2001 through 2009)	Rank
<b>Regional Manufacturing</b>				
Computer and electronic product manufacturing	52.6%	1	-37.5%	11
Chemical manufacturing	6.9%	2	10.0%	1
Fabricated metal product manufacturing	5.7%	3	-41.0%	14
Machinery manufacturing	5.5%	4	-51.4%	18
Food manufacturing	5.3%	5	-13.7%	5
Miscellaneous manufacturing	4.6%	6	-8.5%	3
Transportation equipment manufacturing	3.0%	7	-55.1%	19
Printing and related support activities	1.9%	8	-51.1%	17
Electrical equipment and appliance mfg.	1.8%	9	-32.6%	9
Nonmetallic mineral product manufacturing	1.5%	10	-38.7%	12
Paper manufacturing	1.2%	11	-39.4%	13
Beverage and tobacco product manufacturing	1.2%	12	6.0%	2
Plastics and rubber products manufacturing	1.1%	13	-50.1%	16
Furniture and related product manufacturing	1.0%	14	-48.7%	15
Primary metal manufacturing	0.8%	15	-21.2%	6
Wood product manufacturing	0.4%	16	-31.3%	7
Apparel manufacturing	0.3%	17	-68.9%	20
Textile product mills	0.2%	18	-31.4%	8
Petroleum and coal products manufacturing	0.1%	19	-32.9%	10
Textile mills	0.0%	20	-12.2%	4
Leather and allied product manufacturing	0.0%	21	-70.2%	21

Source: Bureau of Labor Statistics; Economic & Planning Systems, Inc.